



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112  
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT FOR  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

**CHANNEL 254 6.2 KW 200 METERS**

**POPULATION AND AREA DATA**

Based on the 1990 U.S. Census of Population, the number of persons enclosed by the proposed 60 dBu coverage contour is 368,196 persons. The population count was made through the employment of a computer program containing a data base including the geographic coordinates of the centroids of population groupings. The area within the proposed 60 dBu coverage contour is 4,729 square kilometers. This area was determined by a computerized integration program.

**ALLOCATION CONSIDERATIONS**

A review of allotments and assignments on channel 254, on the three immediately upper adjacent, the three immediately lower adjacent channels, and on channels 201 and 200 (53 and 54 channels removed from channel 254), included as Engineering Exhibit E-7, showed that the site proposed would be in accordance with section 73.207 of the FCC Rules.



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112  
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT FOR  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

**CHANNEL 254 6.2 KW 200 METERS**

**ENVIRONMENTAL IMPACT STATEMENT**

The instant proposal is categorically excluded from environmental processing since none of the conditions of Section 1.1306(b)(2) and (3) would be involved for the following reasons:

- 1) The site proposed is not in or near any location referenced in Section 1.1306(b)(1) as being of environmental interest.
- 2) The provisions of Section 1.1306(b)(2) relating to the use of high intensity strobe lighting does not apply since the antenna height proposed with this application does not require this form of lighting to be utilized.
- 3) Compliance to Section 1.1306(b)(3) regarding human exposure to RF radiation was examined for a single source. A search was made about the proposed site coordinates to locate any additional sources of RF radiation. No other sources were found.



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112  
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT FOR  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

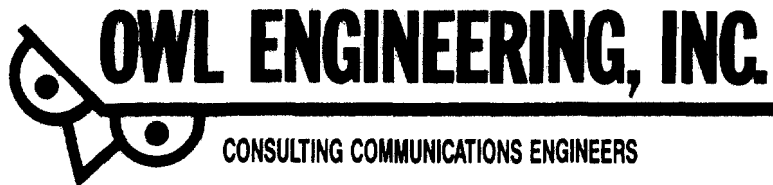
**CHANNEL 254 6.2 KW 200 METERS**

**ENVIRONMENTAL CONSIDERATIONS CONTINUED**

In order to evaluate compliance with FCC exposure guideline for persons located near the base of the tower, Table 1 on page 37 of the FCC's OST Bulletin Number 65, October, 1985 was referenced.

Referring to page 37 of the FCC's OST Bulletin, Table 1 lists the minimum height from the antenna's center of radiation that is required for compliance with the exposure guidelines anywhere on the ground. Since it is proposed to operate with 12.4 kilowatts (total) with a 3 bay ERI antenna, interpolation must be performed between values listed on this table. Specifically, interpolation between the values for 2 and 4 bays and for 10 and 25 kilowatts. The pertinent portion of the table is listed below:

TABLE 1		
Number of Bays		
	2	4
Total ERP (KW)		
10	8.6	5.3
25	13.6	8.4



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112  
(612) 631-1338 • Fax (612) 631-3502

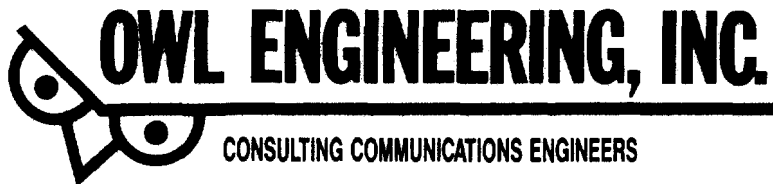
**ENGINEERING EXHIBIT FOR  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

**CHANNEL 254 6.2 KW 200 METERS**

**ENVIRONMENTAL CONSIDERATIONS CONTINUED**

The results of the interpolation yields a value of 7.6 meters (25 feet) from the antenna center of radiation to maintain compliance with the exposure limits. Since it is proposed to mount the antenna center of radiation 23 meters (75 feet) above the ground, anyone located at ground level will remain below the ANSI exposure limit of  $1 \text{ mW/cm}^2$ . It is evident that any person at the base of the tower would be within the ANSI exposure limit.

Access to RF circuitry will be restricted. Signs will be posted warning of the potential danger. When persons require access to the site, tower or antenna for maintenance purposes, the transmitter power will be reduced or completely eliminated to comply with ANSI guidelines. Hence, the conditions of Section 1.1306(b)(3) would not be involved.



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55142  
(612) 631-1338 • Fax (612) 631-3502

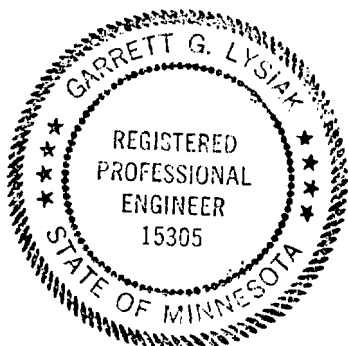
**ENGINEERING EXHIBIT FOR  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

**CHANNEL 254 6.2 KW 200 METERS**

**CONCLUSIONS**

Based on the engineering studies provided, the following conclusions can be obtained:

- (1) Implementation of the instant proposal will provide WARRIOR with a full time aural broadcast service.
- (2) 368,196 persons in 4,729 square kilometers would have an available signal strength of 60 dBu or greater from the proposed construction location.
- (3) All of WARRIOR would be served with a signal of 70 dBu or greater from the proposed construction site.
- (4) The proposal is in complete conformance with all technical rules of the Federal Communications Commission.



  
Garrett G. Lysiak, P.E.

July 12, 1994

## SECTION V-B - FM BROADCAST ENGINEERING DATA

FOR COMMISSION USE ONLY

File No. \_\_\_\_\_

ASB Referral Date \_\_\_\_\_

Referred by \_\_\_\_\_

Name of Applicant

North Jefferson Broadcasting Company, Inc.

Call letters (if issued)

WLBI

Is this application being filed in response to a window? ☐ Yes ☒ No

If Yes, specify closing date: \_\_\_\_\_

Purpose of Application: (check appropriate box(es))

☐

Construct a new (main) facility

☐

Modify existing construction permit for main facility

☒

Modify licensed main facility

☐

Construct a new auxiliary facility

☐

Modify existing construction permit for auxiliary facility

☐

Modify licensed auxiliary facility

If purpose is to modify, indicate below the nature of change(s) and specify the file number(s) of the authorizations affected.

☒

Antenna supporting-structure height

☒

Antenna height above average terrain

☒

Antenna location

☐

Main Studio location

☒

Effective radiated power

☐

Frequency

☒

Class

☐

Other (Summarize briefly)

File Number(s) BLH-920506KC

## 1. Allocation:

Channel No.	Principal community to be served:		
	City	County	State
254	Warrior	Jefferson	AL

Class (check only one box below)

☐

A

☐

B1

☐

B

☒

C3

☐

C2

☐

C1

☐

C

## 2. Exact location of antenna.

(a) Specify address, city, county and state. If no address, specify distance and bearing relative to the nearest town or landmark.

1.3 kilometers north east of the intersection of Highway 31 and Bee Line Highway, 5.7 km south west of Blount Springs AL

(b) Geographical coordinates (to nearest second). If mounted on element of an AM array, specify coordinates of center of array. Otherwise, specify tower location. Specify South Latitude or East Longitude where applicable; otherwise, North Latitude or West Longitude will be presumed.

Latitude	N	33	°	53	'	34	"	Longitude	W	86	°	50	'	09	"
----------	---	----	---	----	---	----	---	-----------	---	----	---	----	---	----	---

## 3. Is the supporting structure the same as that of another station(s) or proposed in another pending application(s)?

☐

Yes

☒

No

If Yes, give call letter(s) or file number(s) or both. \_\_\_\_\_

If proposal involves a change in height of an existing structure, specify existing height above ground level including antenna, all other appurtenances, and lighting, if any. \_\_\_\_\_

SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 2)

4. Does the application propose to correct previous site coordinates?

☐ Yes ☒ No

If Yes, list old coordinates.

Latitude                    °                    '                    "	Longitude                    °                    '                    "
---	--

5. Has the FAA been notified of the proposed construction?

☐ Yes ☒ No

If Yes, give date and office where notice was filed and attach as an Exhibit a copy of FAA determination, if available.

Exhibit No. DNA
--------------------

Date DNA Office where filed \_\_\_\_\_

6. List all landing areas within 8 km of antenna site. Specify distance and bearing from structure to nearest point of the nearest runway.

Landing Area	Distance (km)	Bearing (degrees True)
(a) <u>None</u>	_____	_____
(b) _____	_____	_____

7. (a) Elevation: (to the nearest meter)

(1) of site above mean sea level; 347.5 meters

(2) of the top of supporting structure above ground (including antenna, all other appurtenances, and lighting, if any); and 26 meters

(3) of the top of supporting structure above mean sea level [ (a)(1) + (a)(2) ] 373.5 meters

(b) Height of radiation center: (to the nearest meter) H = Horizontal; V = Vertical

(1) above ground 23 meters (H)

23 meters (V)

(2) above mean sea level [ (a)(1) + (b)(1) ] 370.5 meters (H)

370.5 meters (V)

(3) above average terrain 200 meters (H)

200 meters (V)

8. Attach as an Exhibit sketch(es) of the supporting structure, labelling all elevations required in Question 7 above, except item 7(b)(3). If mounted on an AM directional-array element, specify heights and orientations of all array towers, as well as location of FM radiator.

Exhibit No. E-2
--------------------

9. Effective Radiated Power:

(a) ERP in the horizontal plane 6.2 kw (H\*) 6.2 kw (V\*)

(b) Is beam tilt proposed?

☐ Yes ☒ No

If Yes, specify maximum ERP in the plane of the tilted beam, and attach as an Exhibit a vertical elevational plot of radiated field.

Exhibit No. DNA
--------------------

DNA kw (H\*) \_\_\_\_\_ kw (V\*)

\*Polarization

SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 3)

10. Is a directional antenna proposed?

☐ Yes ☒ No

If Yes, attach as an Exhibit a statement with all data specified in 47 C.F.R. Section 73.316, including plot(s) and tabulations of the relative field.

Exhibit No.  
DNA

11. Will the proposed facility satisfy the requirements of 47 C.F.R. Sections 73.315(a) and (b)?

☒ Yes ☐ No

If No, attach as an Exhibit a request for waiver and justification therefor, including amounts and percentages of population and area that will not receive 3.16 mV/m service.

Exhibit No.  
DNA

12. Will the main studio be within the protected 3.16 mV/m field strength contour of this proposal?

☒ Yes ☐ No

If No, attach as an Exhibit justification pursuant to 47 C.F.R. Section 73.1125.

Exhibit No.  
DNA

13. (a) Does the proposed facility satisfy the requirements of 47 C.F.R. Section 73.207?

☒ Yes ☐ No

(b) If the answer to (a) is No, does 47 C.F.R. Section 73.213 apply?

☐ Yes ☐ No

(c) If the answer to (b) is Yes, attach as an Exhibit a justification, including a summary of previous waivers.

Exhibit No.  
DNA

(d) If the answer to (a) is No and the answer to (b) is No, attach as an Exhibit a statement describing the short spacing(s) and how it or they arose.

Exhibit No.  
DNA

(e) If authorization pursuant to 47 C.F.R. Section 73.215 is requested, attach as an Exhibit a complete engineering study to establish the lack of prohibited overlap of contours involving affected stations. The engineering study must include the following:

Exhibit No.  
DNA

- (1) Protected and interfering contours, in all directions ( $360^{\circ}$ ), for the proposed operation.
- (2) Protected and interfering contours, over pertinent arcs, of all short-spaced assignments, applications and allotments, including a plot showing each transmitter location, with identifying call letters or file numbers, and indication of whether facility is operating or proposed. For vacant allotments, use the reference coordinates as the transmitter location.
- (3) When necessary to show more detail, an additional allocation study utilizing a map with a larger scale to clearly show prohibited overlap will not occur.
- (4) A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire exhibit(s). Sufficient lines should be shown so that the location of the sites may be verified.
- (5) The official title(s) of the map(s) used in the exhibit(s).

14. Are there: (a) within 60 meters of the proposed antenna, any proposed or authorized FM or TV transmitters, or any nonbroadcast (except citizens band or amateur) radio stations; or (b) within the blanketing contour, any established commercial or government receiving stations, cable head-end facilities, or populated areas; or (c) within ten (10) kilometers of the proposed antenna, any proposed or authorized FM or TV transmitters which may produce receiver-induced intermodulation interference?

☒ Yes ☐ No

If Yes, attach as an Exhibit a description of any expected, undesired effects of operations and remedial steps to be pursued if necessary, and a statement accepting full responsibility for the elimination of any objectionable interference (including that caused by receiver-induced or other types of modulation) to facilities in existence or authorized or to radio receivers in use prior to grant of this application. (See 47 C.F.R. Sections 73.315(b), 73.316(e) and 73.318.)

Exhibit No.  
E-3



SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 4)

15. Attach as an Exhibit a 7.5 minute series U.S. Geological Survey topographic quadrangle map that shows clearly, legibly, and accurately, the location of the proposed transmitting antenna. This map must comply with the requirements set forth in Instruction V (D). The map must further clearly and legibly display the original printed contour lines and data as well as latitude and longitude markings, and must bear a scale of distance in kilometers.

Exhibit No.  
E-4

16. Attach as an Exhibit (name the source) a map which shows clearly, legibly, and accurately, and with the original printed latitude and longitude markings and a scale of distance in kilometers:

Exhibit No.  
E-5

State of Alabama Scale 1:500,000

(a) the proposed transmitter location, and the radials along which profile graphs have been prepared;

(b) the 3.16 mV/m and 1 mV/m predicted contours; and

(c) the legal boundaries of the principal community to be served.

17. Specify area in square kilometers (1 sq. mi. = 2.59 sq. km.) and population (latest census) within the predicted 1 mV/m contour.

Area 4,729 sq. km.

Population 368,196

18. For an application involving an auxiliary facility only, attach as an Exhibit a map (Sectional Aeronautical Chart or equivalent) that shows clearly, legibly, and accurately, and with latitude and longitude markings and a scale of distance in kilometers:

Exhibit No.  
DNA

(a) the proposed auxiliary 1 mV/m contour; and

(b) the 1 mV/m contour of the licensed main facility for which the applied-for facility will be auxiliary. Also specify the file number of the license.

19. Terrain and coverage data (to be calculated in accordance with 47 C.F.R. Section 73.313)

Source of terrain data: (check only one box below)

☒ Linearly interpolated 30-second database

☐ 7.5 minute topographic map

(Source: NGDC )

☐ Other (briefly summarize)

## SECTION V-B - FM BROADCAST ENGINEERING DATA (Page 5)

Radial bearing (degrees True)	Height of radiation center above average elevation of radial from 3 to 16 km (meters)	Predicted Distances	
		To the 3.16 mV/m contour (kilometers)	To the 1 mV/m contour (kilometers)
*	215	23.8	40.2
0	215	23.8	40.2
45	154	20.4	34.8
90	211	23.6	40.0
135	218	24.0	40.5
180	224	24.3	40.8
225	131	18.9	32.2
270	242	25.2	42.0
315	206	23.4	39.6

\* Radial through principal community, if not one of the major radials. This radial should NOT be included in the calculation of HAAT. 164.4

## 20. Environmental Statement (See 47 C.F.R. Section 1.1301 et seq.)

Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact?

☐ Yes ☒ No

If you answer Yes, submit as an Exhibit an Environmental Assessment required by Section 1.1311.

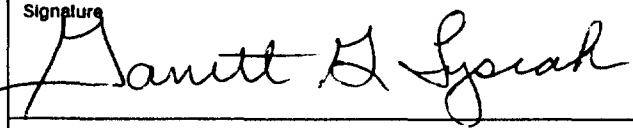
If No, explain briefly why not.

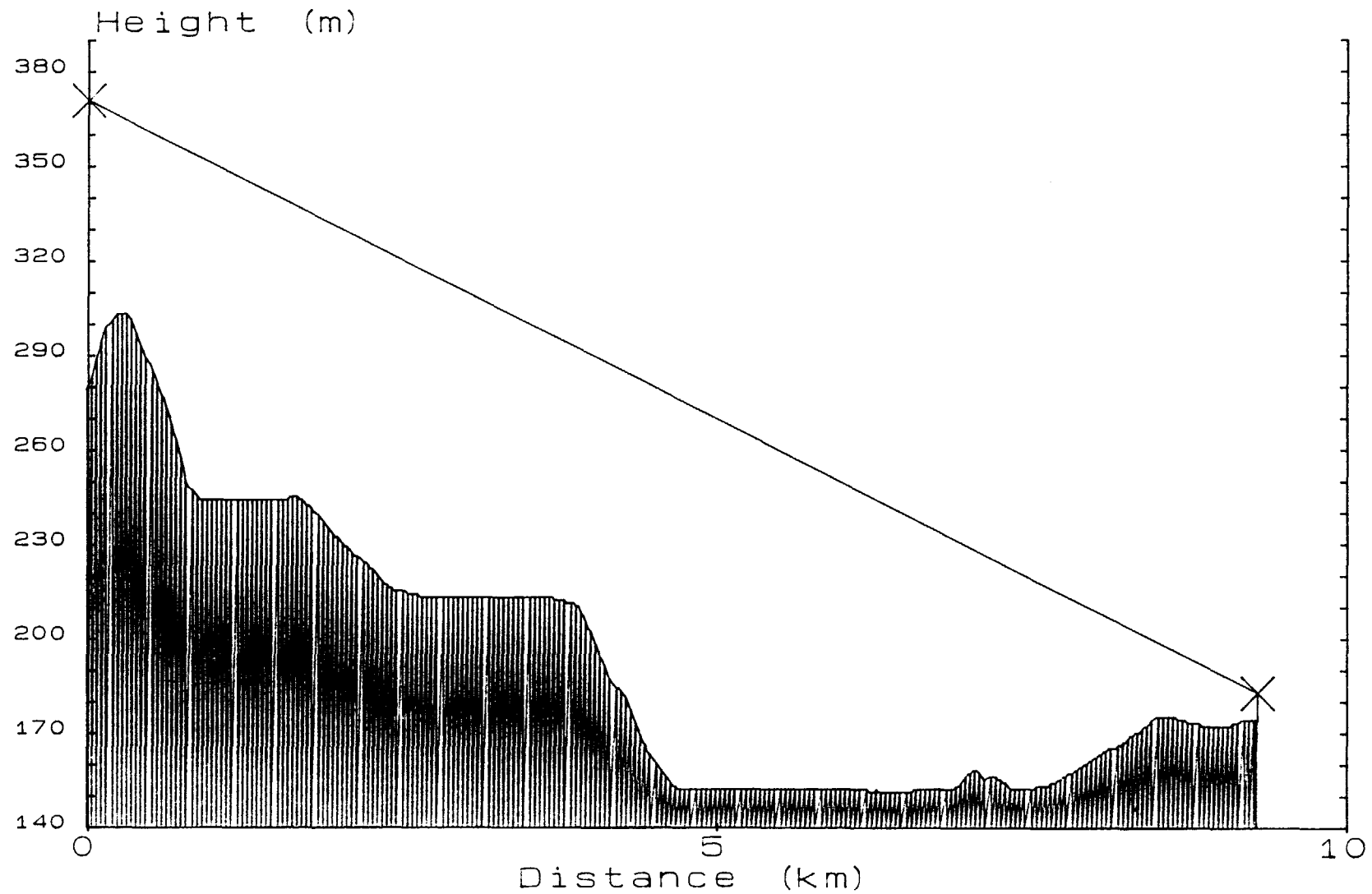
Please see Engineering Exhibit E-6.

Exhibit No.  
E-6

## CERTIFICATION

I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have examined the foregoing and found it to be accurate and true to the best of my knowledge and belief.

Name (Typed or Printed) Garrett G. Lysiak, P.E.	Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer
Signature 	Address (Include ZIP Code) Owl Engineering, Inc. 1306 West County Road F., Ste. 105 Arden Hills, MN 55112
Date 07/12/1994	Telephone No. (Include Area Code) (612) 631-1338



Profile Study for Warrior, AL

Owl Engineering, Inc.  
1306 W. County Rd. F

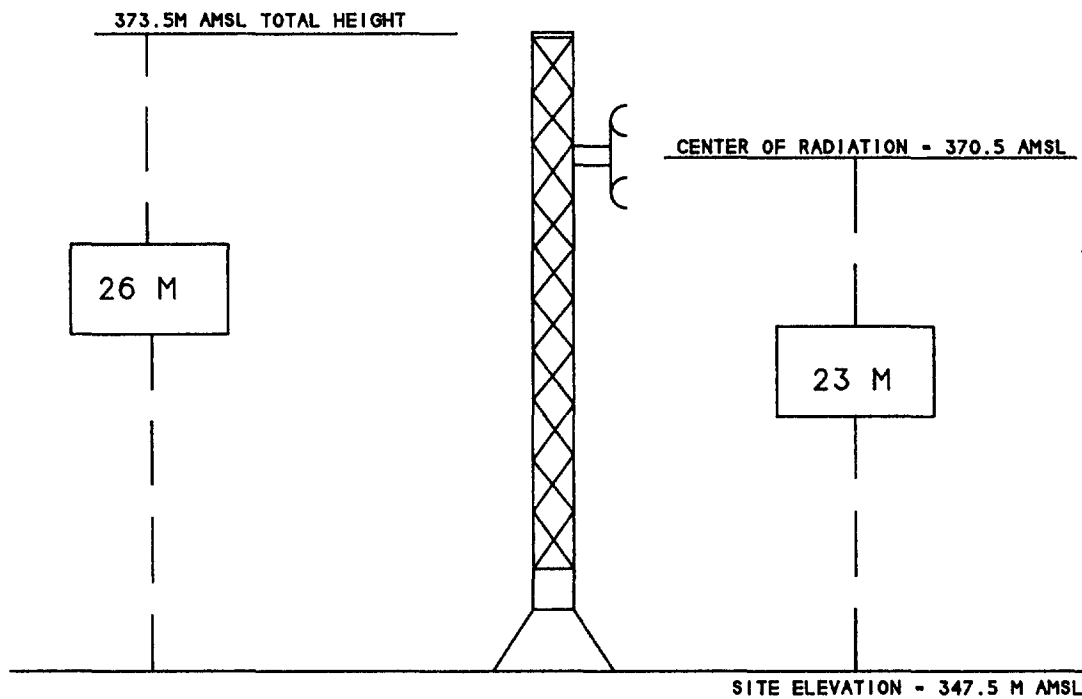
Saint Paul, Minnesota  
(612) 631-1338

Engineering Exhibit E-1



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112  
(612) 631-1338 • Fax (612) 631-3502



OWL ENGINEERING, INC.  
ENGINEERING EXHIBIT E-2

WARRIOR, AL  
NOT TO SCALE

CHANNEL 254C3



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112  
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT E-3  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

**CHANNEL 254 6.2 KW 200 METERS**

**PROPOSED TRANSMITTER AND STUDIO LOCATIONS**

North Jefferson proposes to operate from a site uniquely described by the geographic coordinates:

(NAD 27)  
33° 53' 34" North Latitude  
86° 50' 09" West Longitude

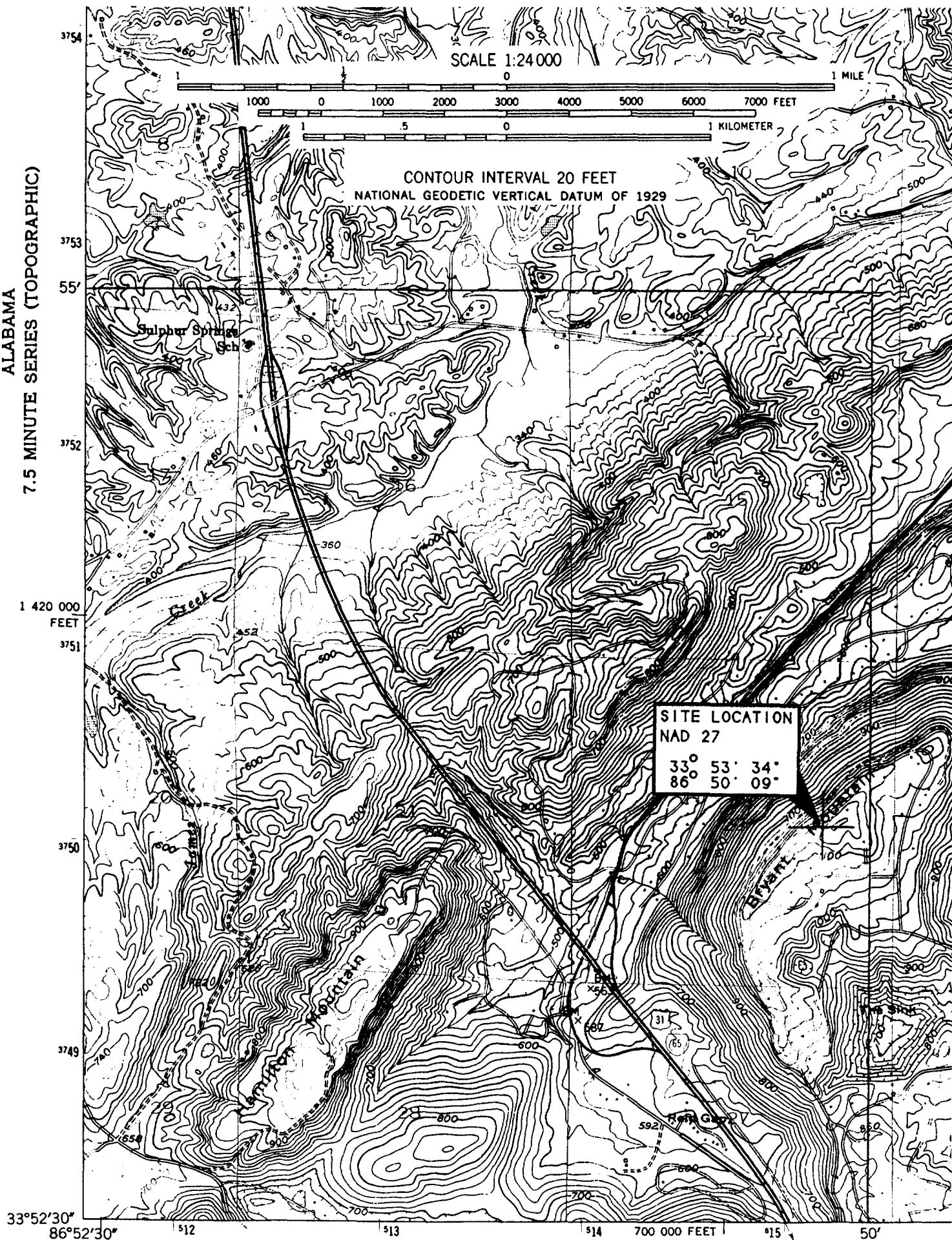
(NAD 83)  
33° 53' 34" North Latitude  
86° 50' 09" West Longitude

Figure E-4 is a portion of the Blount Springs, Alabama 7.5 minute U.S.G.S. topographic quadrangle map showing the proposed transmitter site. No FM or TV transmitters are located within 60 meters of the proposed antenna location. Since there are no other FM or TV facilities located nearby there is not expected to be any receiver induced intermodulation interference or other objectionable interference.

Because the area is rural, there is not expected to be any problem with blanketing interference. The applicant is aware of the provisions of Section 73.318 of the FCC's Rules and the requirement for satisfying all complaints of blanketing interference that are received within a one-year period.

The main studio for the station will be located in the WARRIOR area.

BLOUNT SPRINGS QUADRANGLE  
ALABAMA  
7.5 MINUTE SERIES (TOPOGRAPHIC)



(GREEN)  
3651 IV SW

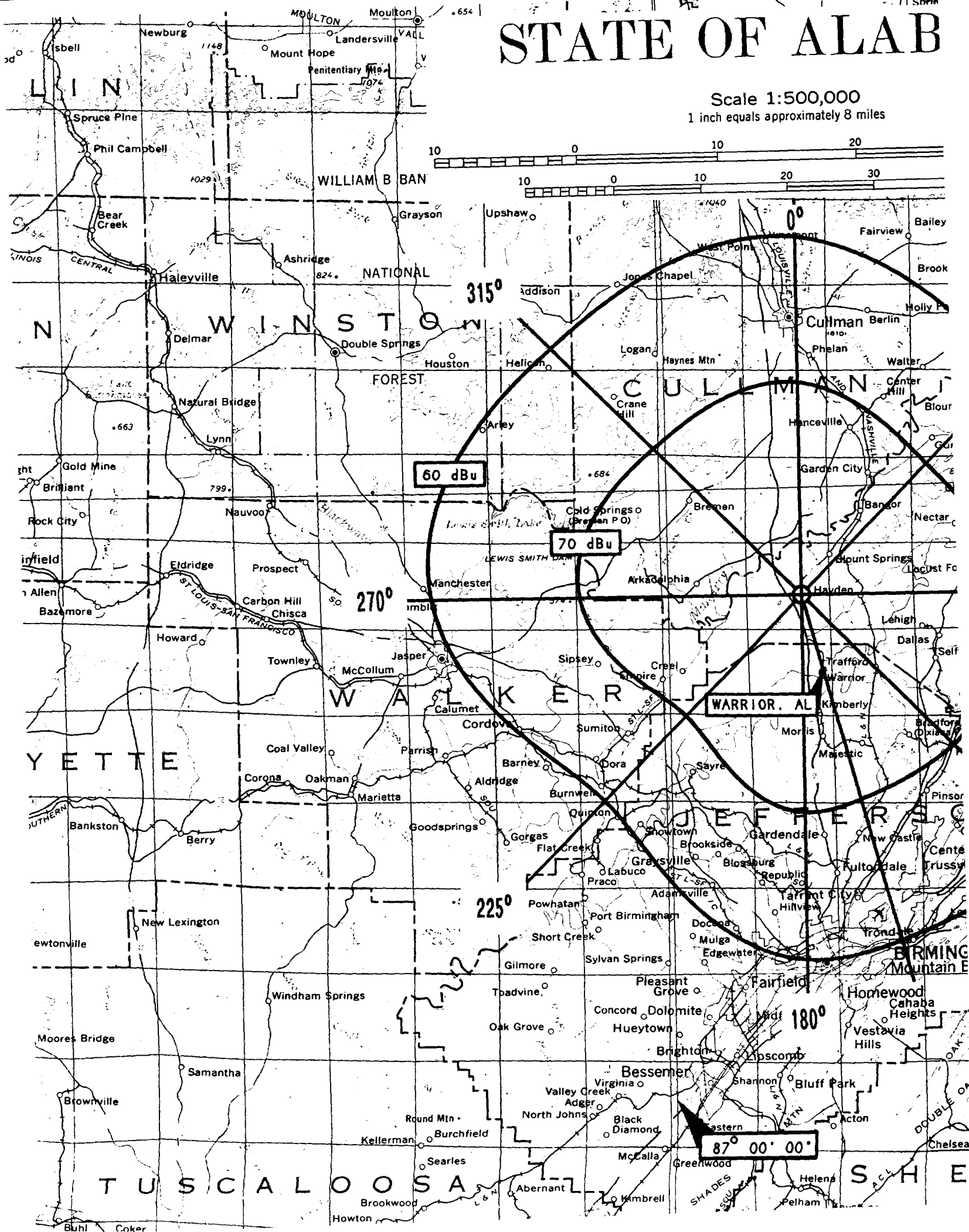
Mapped, edited, and published by the Geological Survey  
Control by USGS, USC&GS, USCE, and Alabama Geodetic Survey  
Topography from aerial photographs by multiplex methods  
Aerial photographs taken 1947. Field check 1951

OWL ENGINEERING, INC.  
ENGINEERING EXHIBIT E-4

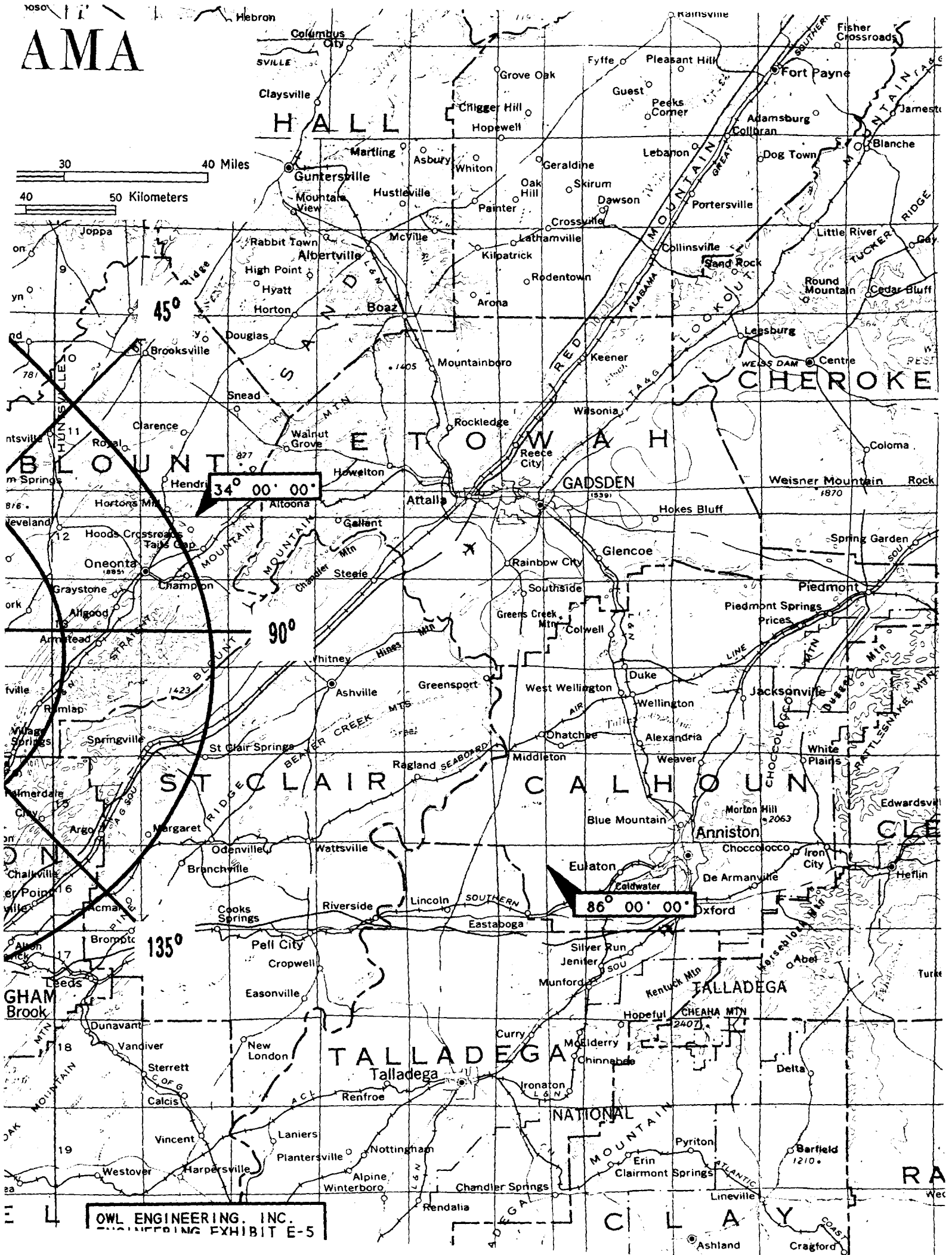
# STATE OF ALAB

Scale 1:500,000

1 inch equals approximately 8 miles



AMA







# OWL ENGINEERING, INC.

CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112  
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT E-6  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

**CHANNEL 254 6.2 KW 200 METERS**

**ENVIRONMENTAL IMPACT STATEMENT**

The instant proposal is categorically excluded from environmental processing since none of the conditions of Section 1.1306(b)(2) and (3) would be involved for the following reasons:

1) The site proposed is not in or near any location referenced in Section 1.1306(b)(1) as being of environmental interest.

2) The provisions of Section 1.1306(b)(2) relating to the use of high intensity strobe lighting does not apply since the antenna height proposed with this application does not require this form of lighting to be utilized.

3) Compliance to Section 1.1306(b)(3) regarding human exposure to RF radiation was examined for a single source. A search was made about the proposed site coordinates to locate any additional sources of RF radiation. No other sources were found.



**ENGINEERING EXHIBIT E-6  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

**CHANNEL 254 6.2 KW 200 METERS**

**ENVIRONMENTAL CONSIDERATIONS CONTINUED**

In order to evaluate compliance with FCC exposure guideline for persons located near the base of the tower, Table 1 on page 37 of the FCC's OST Bulletin Number 65, October, 1985 was referenced.

Referring to page 37 of the FCC's OST Bulletin, Table 1 lists the minimum height from the antenna's center of radiation that is required for compliance with the exposure guidelines anywhere on the ground. Since it is proposed to operate with 12.4 kilowatts (total) with a 3 bay ERI antenna, interpolation must be performed between values listed on this table. Specifically, interpolation between the values for 2 and 4 bays and for 10 and 25 kilowatts. The pertinent portion of the table is listed below:

**TABLE 1**

**Number of Bays**

		<b>2</b>	<b>4</b>
<b>Total ERP (KW)</b>	<b>10</b>	<b>8.6</b>	<b>5.3</b>
	<b>25</b>	<b>13.6</b>	<b>8.4</b>



# OWL ENGINEERING, INC.

CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112  
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT E-6  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

**CHANNEL 254 6.2 KW 200 METERS**

**ENVIRONMENTAL CONSIDERATIONS CONTINUED**

The results of the interpolation yields a value of 7.6 meters (25 feet) from the antenna center of radiation to maintain compliance with the exposure limits. Since it is proposed to mount the antenna center of radiation 23 meters (75 feet) above the ground, anyone located at ground level will remain below the ANSI exposure limit of  $1 \text{ mW/cm}^2$ . It is evident that any person at the base of the tower would be within the ANSI exposure limit.

Access to RF circuitry will be restricted. Signs will be posted warning of the potential danger. When persons require access to the site, tower or antenna for maintenance purposes, the transmitter power will be reduced or completely eliminated to comply with ANSI guidelines. Hence, the conditions of Section 1.1306(b)(3) would not be involved.



# OWL ENGINEERING, INC.

CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55142  
(612) 631-1338 • Fax (612) 631-3502

**ENGINEERING EXHIBIT E-7  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

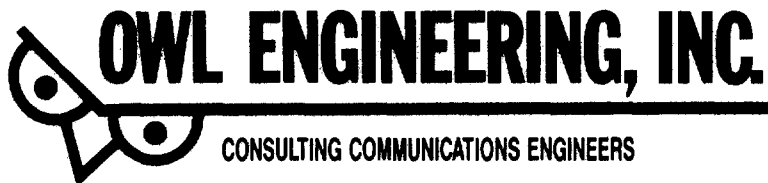
**CHANNEL 254 6.2 KW 200 METERS**

**CHANNEL SPACING STUDY**

FM Channel 254-C3

LATITUDE: 33° 53' 34"  
LONGITUDE: 86° 50' 9"

CHNL	Call	City	Class	Calculated Km.	Required Km.	Clear- ance	Bearing °
201		NO CONFLICT					
251	WTXT	FMAL Fayette	C1	107.75	76	31.75	234.10
252		NO CONFLICT					
253	WZLQ	FMMS Tupelo	C1	178.45	144	34.45	285.34
254		FRAL Cloverdale	A	144.42	142	2.42	323.84
254		FRAL Ider	A	152.59	142	10.59	47.59
255	WBAMFM	FMAL Montgomery	C	175.65	176	-0.35	160.06
256	WAHR	FMAL Huntsville	C	102.02	96	6.02	10.07
257		NO CONFLICT					



CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112  
(612) 631-1338 • Fax (612) 631-3502

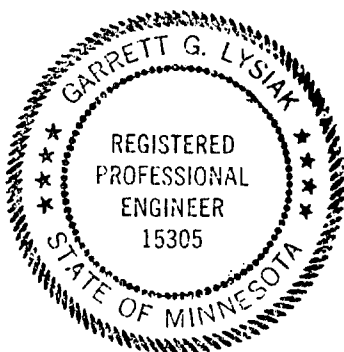
**ENGINEERING EXHIBIT FOR  
APPLICATION FOR FM CONSTRUCTION PERMIT  
NORTH JEFFERSON BROADCASTING COMPANY, INC.  
WARRIOR, ALABAMA**

**CHANNEL 254 6.2 KW 200 METERS**

**AFFIDAVIT**

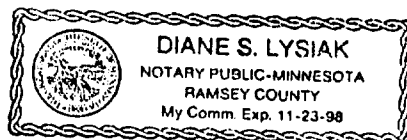
RAMSEY COUNTY                    )  
  )  
STATE OF MINNESOTA            )       ss:

Garrett G. Lysiak, being first duly sworn, says that he is president of Owl Engineering, Inc., consulting communications engineers with offices in Arden Hills, Minnesota; that his qualifications as an expert in communications engineering are a matter of record with the Federal Communications Commission; that the foregoing exhibit was prepared by him and under his direction; and that the statements contained therein are true of his own personal knowledge except those stated to information and belief and, as to those statements, verily believes them to be true and correct.



Garrett G. Lysiak, P.E.

Subscribed and sworn to before me this date July 12, 1994.

  
Diane S. Lysiak  
Notary Public

My commission expires November 23, 1998